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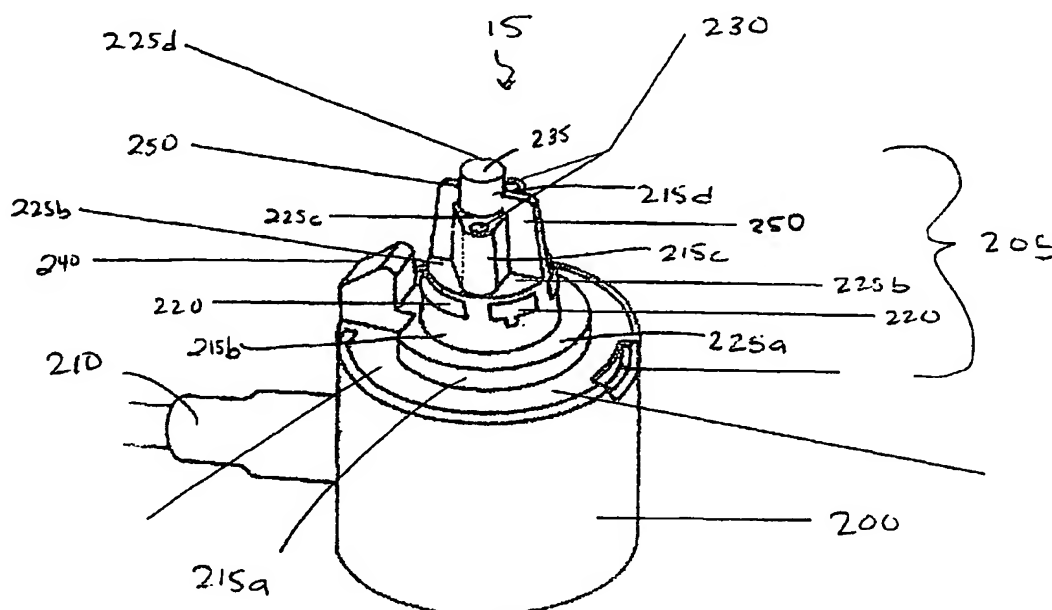
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| <p>(51) <b>International Patent Classification<sup>7</sup>:</b> <b>A61B 5/12, 1/227</b></p> <p>(21) <b>International Application Number:</b><br/>PCT/US2004/016200</p> <p>(22) <b>International Filing Date:</b> 21 May 2004 (21.05.2004)</p> <p>(25) <b>Filing Language:</b> English</p> <p>(26) <b>Publication Language:</b> English</p> <p>(30) <b>Priority Data:</b><br/>60/473,297 23 May 2003 (23.05.2003) US</p> <p>(71) <b>Applicant (for all designated States except US):</b> <b>SON-AMED CORPORATION</b> [US/US]; 1250 Main Street, Waltham, MA 02451 (US).</p> <p>(72) <b>Inventors; and</b></p> <p>(75) <b>Inventors/Applicants (for US only):</b> <b>DOLPHIN, William, F.</b> [US/US]; 18 Palm Road, Waiheke Island, Auckland 1240 (NZ). <b>QUICK, Andrew</b> [US/US]; 45 Country Village Lane, Sudbury, MA 01776 (US).</p> | <p>(74) <b>Agent:</b> <b>CAPRARO, Joseph, A., Jr.;</b> Proskauer Rose LLP, One International Place, 14 Floor, Boston, MA 02110 (US).</p> <p>(81) <b>Designated States (unless otherwise indicated, for every kind of national protection available):</b> AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.</p> <p>(84) <b>Designated States (unless otherwise indicated, for every kind of regional protection available):</b> ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).</p> |
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*[Continued on next page]*

**(54) Title: EAR PROBE AND DISPOSABLE EAR TIP SYSTEM**



**(57) Abstract:** An improved ear probe and disposable ear tip system for insertion into an ear canal of a subject during auditory testing. The probe includes a base portion and a cap portion. The base portion of the probe houses electronic components for sound generation, transmission and collection. The cap portion of the probe includes features for mechanical attachment of the tip to the probe in such a way as to provide a tight acoustic seal between the probe and the tip. The tip is disposable and protects the probe from being occluded by debris in the ear canal.

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**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**(88) Date of publication of the international search report:**

3 March 2005

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/016200

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7. A61B5/12 A61B1/227

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 A61B H04R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 002 151 A (OLIVEIRA ROBERT J ET AL) 26 March 1991 (1991-03-26)  column 2, line 27 - column 10, line 64 figures 1-12 claims 1-38	1-4,9, 12-15, 21,37, 46-50,53
Y		8,10,11, 16, 22-25, 54-57
Y	US 5 916 174 A (DOLPHIN WILLIAM F) 29 June 1999 (1999-06-29) cited in the application  the whole document	8,10,11, 16, 22-25, 54-57
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

8 September 2004

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24.12.2004

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# INTERNATIONAL SEARCH REPORT

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 nal Application No  
 PCT/US2004/016200

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 146 775 A (CONNORS JOHN D ET AL) 1 September 1964 (1964-09-01)  the whole document -----	1-4, 9-16, 21-25, 37, 46-50, 53-57
A	US 5 742 692 A (CLAES RUDI A M ET AL) 21 April 1998 (1998-04-21)  the whole document -----	1-4, 9-16, 21-25, 37, 46-50, 53-57
A	EP 1 039 779 A (DECIBEL INSTR INC) 27 September 2000 (2000-09-27)  the whole document -----	1-4, 12-16, 21,37, 46-50,53

# INTERNATIONAL SEARCH REPORT

ational application No.  
PCT/US2004/016200

## Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4, 8-16, 21-25 37,46-50, 53-57

1.1. claims: 1-4, 12-16, 21, 37, 46-50, 53

Constructional details of the attachment mechanism of an ear probe and a disposable tip

1.2. claims: 8-11, 22-25, 54-57

Optional devices which are included in an ear probe system (light source or microphone)

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2. claims: 5-7, 12, 17-20, 26-36, 38-45, 51, 52, 58-61

Alignment features of an ear probe with a disposable tip

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 Int. Application No  
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